Claims

[c1] 1. A control method for compensating changes in an SRS-Induced Power Exchange when connecting channels into, and disconnecting channels from, a continuous optical data transmission path of a WDM system, the method comprising the steps of:

providing at least two systems which operate at different speeds to influence tilting of a spectrum of data signals in the optical data transmission path;

measuring a change in overall power in the optical data transmission path via at least one quicker system of the at least two systems; and

compensating the tilting by changing a power of at least one injected full light source via the at least one quicker system.

[c2] 2. A control method for compensating changes in an SRS-Induced Power Exchange as claimed in Claim 1, the method further comprising the step of:

incorporating a time delay in the signal in the optical data transmission path between measurement of the overall power and injection of the at least one full light source.

[c3] 3. A control method for compensating changes in an SRS-Induced Power Exchange as claimed in Claim 1, the method further comprising the step of:

providing a controllable filter, wherein the influencing of the tilting of the spectrum is additionally performed by the controllable filter.

[c4] 4. A control method for compensating changes in an SRS-Induced Power Exchange as claimed in Claim 1, further comprising:

power-controlled EDFA, wherein the influencing of the tilting of the spectrum is at least additionally performed by the power-controlled EDFA.

[c5] 5. A control method for compensating changes in an SRS-Induced Power Exchange as claimed in Claim 1, wherein the at least one quicker system performs the step of compensating the tilting quickly, and a slower

system of the at least two systems then returns the compensating of the tilting slowly in a direction of an original state.

[c6] 6. A control method for compensating changes in an SRS-Induced Power Exchange as claimed in Claim 1, wherein the at least one injected full light source is injected at a start of the optical data transmission path.

[c7] 7. A control method for compensating changes in an SRS-Induced Power Exchange as claimed in Claim 1, wherein the at least one injected full light source is injected at an end of the optical data transmission path and counter to a direction of transmission.

[c8] 8. A optical data transmission path having a WDM system with a plurality of data transmission channels of different frequencies, comprising:

at least one multiplexer, arranged at a beginning of the optical data transmission path, for combining the data transmission channels;

a demultiplexer, arranged at an end of the optical data transmission path, for separating the data transmission channels; and

at least one path section arranged between the at least one multiplexer and the demultiplexer for determining and compensating spectral tilting of transmitted data signals, the at least one path section including a part for measuring an overall intensity of the transmitted data signals, at least one controlled full light source for injecting light power into the at least one path section, and a part for controlling power of the full light source to compensate power fluctuations of the overall intensity of the transmitted data signals.

[c9] 9. An optical data transmission path as claimed in Claim 8, wherein both the part for measuring the overall intensity of the transmitted data signals and the at least one controlled full light source are arranged at a beginning of the at least one path section.

[c10] 10. An optical data transmission path as claimed in Claim 8, further comprising:

a delay element provided between the part for measuring the overall intensity of the transmitted data signals and the at least one controlled full light source.

[c11] 11. An optical data transmission path as claimed in Claim 10, wherein the delay element is selected from the group consisting of a dispersion-compensating fiber, a fiber with low dispersion, and a fiber doped with a rare earth element.

[c12] 12. An optical data transmission path as claimed in Claim 8, wherein all of the parts of the at least one path section are provided as a control element which can be influenced quickly.

[c13] 13. An optical data transmission path as claimed in Claim 8, wherein a frequency of the at least one controlled full light source lies within a transmitted waive length band of the transmitted data signals, and the at least one controlled full light source has a signal frequency.

[c14] 14. An optical data transmission path as claimed in Claim 8, wherein the at least one path section includes frequency-dependent filters which can be controlled in the at least one path section for compensating the tilting.

[c15] 15. An optical data transmission path as claimed in Claim 8, wherein the at least one path section includes power-controlled EDFA for compensating the tilting.

[c16] 16. An optical data transmission path as claimed in Claim 8, wherein the at least one path section includes at least one element, which is one of a filter and an amplifier, with a respective frequency-dependent transmission characteristic and a game characteristic, as well as downstream overall intensity meters, including an evaluation unit for determining the tilting.